

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on June 12, 2002, and the references cited therewith.

Claims 1, 8, 20, 30, 35, 36, 37, 42, 43, 49, 52, 64, and 74 are amended, claims 6, 7, 9, 10, 21, 22, 39, 40, 47, 48, 50, 51, 53, 54, 65, 66, 78, and 79 are cancelled; as a result, claims 1-5, 8, 11-20, 23-38, 41-46, 49, 52, 55-64, 67-77 are now pending in this application.

Claim Objections

Claims 18, 30-36 and 62 are objected to as it includes the terminology, "data structure", which is so different from that which is generally accepted in the computer art. The "data structure" is generally meant the logical data arrangement by a database engine.

Applicant respectfully traverses the objection. The M.P.E.P. defines "data structure" as "a physical or logical relationship among data elements, designed to support specific data manipulation functions" (*see* M.P.E.P. § 2106 (IV)(B.)(1) *citing* The New IEEE Standard Dictionary of Electronic and Electrical Terms 308 (5th ed. 1993)). Figure 5 of the application illustrates that the data elements have a logical relationship. Thus, the use of the term "data structure" is consistent with what is used in the computer art. Reconsideration and allowance of the term is requested.

§103 Rejection of the Claims

Claims 1 - 2, 4 - 7, and 30 - 42 were rejected under 35 USC § 103(a) as being unpatentable over Lange, et al. (U.S. Patent No.3,845,474) (hereinafter Lange) in view of Suzuki, et al. (U.S. 4,151,592) (hereinafter Suzuki).

For a rejection under 35 USC § 103(a) the Office Action must establish a *prima facie* case of obviousness. Applicant respectfully submits that the Office Action did not make out a *prima facie* case of obviousness because even if combined, the cited references fail to teach or suggest all of the elements of Applicant's claimed invention.

In Response to the Rejection of Claim 1:

Claim 1 has been amended to incorporate the limitations of claims 6 and 7. Consequently, claims 6 and 7 have been cancelled.

Insofar as the rejection is applied to claim 1 as amended, Applicant respectfully traverses the rejection because not all elements of claim 1 are discussed in Lange when combined with Suzuki. For example, Applicant is unable to find in the cited portions of the references “wherein at least a portion of the memory of the at least one entity is selectively reset when the at least one entity has access to the resource, wherein the memory portion is reset if the entity does not currently have control of the resource, and wherein the memory portion is not reset when the at least one entity currently has control of the resource,” as recited in amended claim 1.

Applicant respectfully submits that claims 1 is allowable in its amended form.

In Response to the Rejection of Claims 2, 4, and 5:

Applicant respectfully traverses the rejection as applied to claims 2, 4, and 5. Claims 2, 4, and 5 are dependent on claim 1 and provide further limitations to claim 1 which is believed to be allowable as amended. Applicant respectfully requests reconsideration and allowance of claims 2, 4, and 5.

In Response to the Rejection of Claim 30:

Insofar as the rejection is applied to claim 30, Applicant respectfully traverses the rejection because not all elements of claim 30 are discussed in Lange when combined with Suzuki. For example, Applicant is unable to find in the cited portions of the references “a data structure in a machine-readable medium for allowing at least one resource to be shared among a plurality of processors,” or “a first identifier for identifying a past processor that had exclusive control of the at least one resource.” Reconsideration and allowance of claim 30 is respectfully requested.

In Response to the Rejection of Claims 31 through 36:

Applicant respectfully traverses the rejection as applied to claims 31, through 36. Claims

31 through 36 are dependent on claim 30 and provide further limitations to claim 30 which is believed to be allowable.

In addition, insofar as the rejection is applied to claim 33, Applicant is unable to find the subject matter in the cited portions of the references. For example, Applicant is unable to find “further comprising an act for comparing the first identifier and the second identifier, and wherein the act for resetting the fast memory of the present processor being executed when the first identifier is different from the second identifier.”

Concerning claim 35, Applicant is again unable to find the subject matter in the cited portions of the references. For example, Applicant is unable to find “further comprising a data type that is adapted to represent at least one portion of the at least one resource, wherein the data type includes at least one location of the at least one portion of the at least one resource and at least one dimension of the at least one portion of the at least one resource.”

Concerning claim 36, Applicant is again unable to find the subject matter in the cited portions of the references. For example, Applicant is unable to find “further comprising a list that includes at least one location of at least one portion of the at least one resource and at least one dimension of at least one portion of the at least one resource.”

Applicant respectfully requests reconsideration and allowance of claims 31 through 36.

In Response to the Rejection of Claim 37:

Claim 37 has been amended to incorporate the limitations of claims 39 and 40. Consequently, claims 39 and 40 have been cancelled.

Insofar as the rejection is applied to claim 37 as amended, Applicant respectfully traverses the rejection because not all elements of claim 37 are discussed in Lange when combined with Suzuki. For example, Applicant is unable to find in the cited portions of the references “comparing the first identity and the second identity so as to determine if the present processor is different from the past processor,” or “resetting a portion of the fast memory of the present processor when the past processor is different from the present processor and not resetting selectively the at least a portion of the fast memory of the present processor when the past processor is the same as the past processor.” Applicant respectfully submits that claims 37 is

allowable in its amended form.

In Response to the Rejection of Claims 38 and 41:

Applicant respectfully traverses the rejection as applied to claims 38 and 41. Claims 38 and 41 are dependent on claim 37 and provide further limitations to claim 37 which is believed to be allowable as amended. Applicant respectfully requests reconsideration and allowance of claims 38 and 41.

In Response to the Rejection of Claim 42:

Claim 42 has been amended to better recite the present subject matter.

Applicant respectfully traverses the rejection insofar as it is applied to the claim, as clarified, since the cited portions of Lange combined with the cited portions of Suzuki fail to teach or suggest all of the elements of Applicant's claim 42. For example, Applicant is unable to find "a lock, in a cooperative relationship with the switching mechanism, for reserving exclusive control of the resource to a first processor, wherein at least a portion of the fast memory of the first processor is reset when the second processor obtains exclusive control of the resource and not reset when the exclusive control of the resource remains with the first processor."

Reconsideration and allowance of claim 42 is requested.

Claims 3, 8-29, and 43-79 were rejected under 35 USC § 103(a) as being unpatentable over Lange, et al. (U.S. Patent No. 3,845,474) in view of Suzuki, et al. (U.S. 4,151,592) and further in view of Moreton (U.S. Patent No. 4,035,777). Applicant believes the Office Action intended to reject claim 2, since claim 2 recites an integrated circuit.

In Response to the Rejection of Claims 2 and 3:

The Office Action rejected claims 2 and 3 as obvious to one skilled in the art to adapt Moreton to Lange and Suzuki.

Applicant respectfully traverses the rejection of claims 2 and 3. Moreton teaches a multiprocessor system as an integrated circuit. Claims 2 and 3 are, however, dependent on claim

1 and inherit all of the limitations of claim 1. As noted above, limitations of claim 1 are not present in either Lange or Suzuki. The combination of Moreton with these references does not provide the missing limitations.

In Response to the Rejection of Claims 8 - 11, 14 - 16, 19 - 22, 27 - 29, 43 - 44, 46 - 55, 58 - 59, 63 - 66, 71 - 75, 77 - 79:

Claims 8, 20, 43, 49, 52, 64, and 74 have been amended to incorporate the limitations of claims 9 and 10, 21 and 22, 47 and 48, 50 and 51, 53 and 54, 65 and 66, and 78 and 79, respectively. Consequently, claims 9, 10, 21, 22, 47, 48, 50, 51, 53, 54, 65, 66, 78, and 79 are cancelled.

The Office Action rejected claims 8 - 11, 14 - 16, 19 - 22, 27 - 29, 43 - 44, 46 - 55, 58 - 59, 63 - 66, 71 - 75, 77 - 79 over Lange in view of Suzuki in further view of Moreton. The Office Action takes official notice that Lange's communication control unit can be equivalent to the claimed hardware switch mechanism or the claimed lock, and that it is well known that each processor can equip with L1 cache and L2 cache.

Applicant respectfully traverses the official notices and requests the Examiner to provide references that describes such elements. Absent references, it appears that the Examiner is using personal knowledge, so the Examiner is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

Also, Applicant traverses the rejection of the claims as amended because the cited references in combination fail to teach or suggest all of the elements of applicant's claims.

For example, Applicant is unable to find in the cited portions of the references "a switch mechanism, coupled to the central computing unit, to switch the control of the resource, wherein a portion of the fast memory of the first processor is reset when the control of the resource is switched to the second processor and not reset when control of the resource remains with the first processor" as recited in amended claims 8 and 52.

Or for example, "a lock coupled to the central computing unit to reserve exclusive control of the resource, wherein a portion of the fast memory of the first processor is reset when the second processor obtains exclusive control of the resource from the first processor and not reset

when exclusive control remains with the first processor,” as recited in amended claims 20 and 64.

Or for example, “a lock, in a cooperative relationship with the switching mechanism, to reserve exclusive control of the resource to a first processor, wherein at least a portion of the fast memory of the first processor is reset when the second processor obtains exclusive control of the resource and not reset when the exclusive control of the resource remains with the first processor,” as recited in amended claims 43 and 74.

Or for example, “a scheduler, coupled to the central computing unit, for scheduling the control of the resource, wherein a portion of the fast memory of the first processor is reset when the resource becomes under the control of the second processor and not reset when the resource remains under the control of the first processor,” as recited in amended claim 49.

Applicant respectfully traverses the rejection as applied to claims 11, 14 - 16, 19, 27 - 29, 44, 46, 55, 58, 59, 63, 71 - 73, and 75. The claims are dependent claims that provide further limitations to independent claims that are believed to be allowable as amended. Applicant respectfully requests reconsideration and allowance of claims 11, 14 - 16, 19, 27 - 29, 44, 46, 55, 58, 59, 63, 71 - 73, and 75.

In Response to the Rejection of Claims 12, 13, 56, and 57:

The Office Action rejected claims 12, 13, 56, and 57 over Lange in view of Suzuki and in further view of Moreton. Applicant respectfully traverses the rejection.

Claims 12 - 13, and 56 - 57 are dependent claims that provide limitations to amended independent claims 8 and 52, respectively, and inherit all of the limitations of those claims. As noted above, limitations of claims 8 and 52 are not present in either Lange or Suzuki. The combination of Moreton with these references does not provide the missing limitations.

Applicant further traverses the contention from the Office Action that “since the Lange’s gate is a software that manages the memory access, it is said the Lange’s gate is equivalent to the claimed software switch.” Since the dependent claims inherit all of the limitations of the independent claims, Applicant cannot find all of the limitations of the claims in the cited reference to Lange’s gate. For example, Applicant cannot find “a switch mechanism, coupled to

the central computing unit, to switch the control of the resource, wherein a portion of the fast memory of the first processor is reset when the control of the resource is switched to the second processor and not reset when control of the resource remains with the first processor,” as recited in the dependent claims when read with the independent claim. Thus, Lange’s gate is not equivalent to the software switch when the dependent claim is read with its independent claim.

The Office Action also took Official Notice that E. W. Dijkstra is a well known professor for his thread-related concept. Applicant respectfully traverses the Official Notice because even if it is as the Examiner states, the Office Action failed to provide a reference from Prof. Dijkstra that describes the elements of claims 12, 13, 56, and 57. Absent a reference, it appears that the Examiner is using personal knowledge, so the Examiner is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

Applicant respectfully requests reconsideration and allowance of claims 12, 13, 56, and 57.

In Response to the Rejection of Claims 16, 26, 45, 60, 70, and 76:

The Office Action rejected claims 16, 26, 45, 60, 70, and 76 over Lange in view of Suzuki and in further view of Moreton. Applicant respectfully traverses the rejection.

Claims 16, 26, 45, 60, 70, and 76 are dependent claims that provide limitations to amended independent claims 8, 20, 43, 52, 64, and 74, respectively, that are believed to be allowable as amended.

The Office Action also stated that Lange’s system controller is equivalent to the claimed channel controller, but does not provide a reference in support of the statement. Applicant respectfully traverses the assertion of equivalency. Absent references, it appears that the Examiner is using personal knowledge, so the Examiner is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

Applicant respectfully requests reconsideration and allowance of claims 16, 26, 45, 60, 70, and 76.

In Response to the Rejection of Claims 17 - 18, 24 - 25, 61 - 62, and 68 - 69:

The Office Action rejected claims 17 - 18, 24 - 25, 61 - 62, and 68 - 69 over Lange in view of Suzuki and in further view of Moreton. Applicant respectfully traverses the rejection.

Claims 17 - 18, 24 - 25, 61 - 62, and 68 - 69 are dependent on independent claims 8, 20, 52, and 64, respectively, and inherit all of the limitations of those claims. As noted above, limitations of the independent claims are not present in the combination of Lane, Suzuki, and Moreton.

The Office Action also takes Official Notice of memory containing software as part of a system resource, that software can be a database with a database structure for data management and storage, and that any executable resource is in binary format. Applicant respectfully traverses this official notice and requests the Examiner to provide a reference that describes the elements in combination with the elements of the independent claims. Absent a reference, it appears that the Examiner is using personal knowledge, so the Examiner is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

Applicant respectfully requests reconsideration and allowance of claims 17 - 18, 24 - 25, 61 - 62, and 68 - 69.

In Response to the Rejection of Claims 23 and 67:

The Office Action rejected claims 23 and 67 over Lange in view of Suzuki and in further view of Moreton. Applicant respectfully traverses the rejection.

Claims 23 and 67 are dependent claims that provide limitations to amended independent claims 20, and 64, respectively, that are believed to be allowable as amended.

The Office Action also took Official Notice of a multiprocessor system with a master processor, and that Lange's register can be used to store and track resource usage. Applicant respectfully traverses this official notice and requests the Examiner to provide a reference that describes the elements of the dependent claims combined with the elements of the independent claims. Absent a reference, it appears that the Examiner is using personal knowledge, so the Examiner is respectfully requested to submit an affidavit as required by 37 C.F.R. § 1.104(d)(2).

Applicant respectfully requests reconsideration and allowance of claims 23 and 67.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612-373-6909) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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By

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 10 day of October, 2002.

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Name

Signature

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